RESEARCH

CONSEQUENCES OF SUBSTANCE ADDICTION: A CONTRIBUTION TO THE VALIDATION OF NOC OUTCOMES

CONSEQUÊNCIAS DA DEPENDÊNCIA DE SUBSTÂNCIAS: UMA CONTRIBUIÇÃO PARA A VALIDAÇÃO DO RESULTADO NOC

CONSECUENCIAS DE LA DEPENDENCIA DE SUSTANCIAS: UNA CONTRIBUCIÓN A LA VALIDACIÓN DE LOS RESULTADOS DE LA NOC

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ABSTRACT

The present research is a quantitative study that aims at validating the content result of the Nursing Outcomes Classification (NOC) "Consequences of substance addiction ". NOC research teams and Fehring model recommendations were observed. Results presented 16 indicators; 12 were added according to literature; four were discarded. Final questionnaire proposed 24 indicators; 10 with values > 0.80 (primary) and 14 with values > 0.50 and < 0.80 (secondary). Experts agreed upon indicators added: eight primary and four secondary. Four NOC original indicators were excluded (< 0.50) and two were classified as primary. Current research includes a content-validated multidimensional view of the drug abuse phenomenon; it informs nurses about physical, psychological, social and spiritual interventions. The study precedes clinical validation. Researchers recommend it to be used in a broad sample of poly drug users, in order to obtain a new tool that contributes to a more systematic care and meets those specific health needs.

Keywords: Substance Addiction Consequences; Nursing; Drug; Assessment.

RESUMO

Realizou-se estudo quantitativo para validar o conteúdo do resultado da Nursing Outcome Classification (NOC), "Consequências da dependência de substâncias". Foram seguidas as recomendações dos pesquisadores da NOC e do modelo de Fehring, consultando peritos. O resultado tinha 16 indicadores, acrescentados 12 com base na literatura. Foram eliminados quatro, ficando o questionário final com 24 indicadores, 10 com valores > 0,80 (principais) e 14 com valores > 0,50 e < 0,80 (secundários). Os indicadores acrescentados tiveram concordância dos peritos, oito como principais e quatro como secundários. Dos indicadores inicias da NOC, foram excluídos quatro (< 0,50) e dois classificados como principais. O conteúdo validado nesta pesquisa inclui uma visão multidimensional do fenômeno do consumo de drogas e alerta os enfermeiros para intervenções no domínio físico, psíquico, social e espiritual. O estudo precede a validação clínica. Recomenda-se a aplicação numa extensa amostra de usuários de múltiplas drogas com o objetivo de conseguir-se um instrumento que ajude numa prática de cuidados mais sistematizados e que atenda às necessidades em saúde.

Palavras-chave: *Consequências da Dependência de Substâncias; Enfermagem; Drogas; Avaliação.*

RESUMEN

Se realizó un estudio cuantitativo para validar el contenido del resultado de la Clasificación de Resultados de Enfermería – NOC (Nursing Outcome Classification) "Consecuencias de la dependencia de sustancias." Se siguieron las recomendaciones de los investigadores de la NOC y del modelo Fehring, siempre en contacto con expertos. El resultado indicó 16 indicadores; luego se agregaron otros 12 en base a la literatura. Se eliminaros 4 y, en el cuestionario final, quedaron 24 indicadores, 10 con valores > 0,80 (principales) y 14 con valores > 0,50 y 0,80 < (secundarios). Según los expertos 8 de los indicadores agregados eran principales y 4 secundarias. De los indicadores iniciales de la NOC se excluyeron 4 (< 0,50) y 2 fueron clasificados como principales. El contenido validado en esta investigación parte de la visión multidimensional del fenómeno del consumo de drogas y alerta enfermeros para que intervengan en el dominio físico, psicológico, social y espiritual. El estudio antecede la validación clínica. Se recomienda emplearlo en una amplia muestra de usuarios de múltiples fármacos con miras a obtener una herramienta que contribuya a la práctica sistemática de la atención y que responda a las necesidades de salud de estas personas.

Palabras clave*: Consecuencias de la Dependencia de Sustancias; Enfermería; Drogas; Evaluación.*

INTRODUCTION

Evaluation of nursing interventions is a current need; it enables the analysis of advances in health care and it is a dynamic tool for improving practices. Health outcomes are sensitive to nursing care; it is an area of interest for research due to the complexity to investigate the contribution of each specialty to the obtained results.[1, 2.]

Nursing Outcomes Classification (NOC) describes the relationship between health outcomes and nursing interventions. It was developed at the University of Iowa where health outcomes have been studied, developed and validated in a global context.[3]

Each "outcome" assesses the contribution of specific interventions to a person's health and contains indicators measured during the period in which that person was under nursing care. The analysis of such indicators enables the evaluation of nursing care effectiveness i.e., the measuring of the degree in which this indicator is sensitive to nursing care.[4] It enables, from the beginning, the assessment of a patient's outcome.[3]

Researchers decided to include in the current study the outcome *"Consequences of substance addiction"* in a broader research on outcomes sensitive to nursing care to drug users. The choice of "outcomes" implies particular attention to measurements reliability between different populations and settings.

This study on opioid dependence takes into account the particularities of multiple drug use that contributes to poorer health and more comorbidities[5]. While the rate of heroin users is stabilized, opiate dependence is still a big challenge for those working in the public health service. It accounts for 75.8% of the requests for assistance from the Institute on Drugs and Drug Addiction (IDT).[6]

Care for drug users can focus on treatment, abstinence or cure. The issue could also be approached with polices aiming at risk reduction and minimization of harm.

This more pragmatic approach regards the disease as multidimensional and complex. Long-term abstinence is not attainable for many people although it is possible to promote hope, reduce vulnerability, improve quality of life and stimulate social integration. This can be achieved by lowering and changing the route of consumption, reducing risk behaviours, upgrading physical and psychological health as well as improving work, social and familiar functioning, reducing criminal activity and changing a dependence pattern into an occasional use.[7]

Drug addiction is nowadays considered a chronic disease. Caregivers' perspective has changed. The disease's classification and its implications are confirmed by longitudinal studies that demonstrate the chronic nature of relapse and the need for long-term treatment strategies.[8-10]

The population with a drug use disorder is progressively older and sicker. In 2010, average age of patients at a public health centre was 38 years. The number of poly drug users has increased.[6]

Drug users with certain chronic diseases who adhere to treatment are becoming increasingly old and more prone to comorbidities.

In 2010, 27.392 people were in a maintenance program with opioid agonists (methadone and buprenorphine) of which 72% for methadone, 3.801 new patients were admitted and 2.862 readmitted, totalling 6.6636 people. The number of hospital readmissions supports the concept of chronic disease.

Multiple drug use, comorbidities and aging signs determine health needs of drug users. These factors influence needs and interventions, and are sensitive to nursing care.[11]

Psychiatric comorbidities are present in 70% of the dependents, the most common ones being depression, antisocial personality disorder and borderline personality disorder5. People with mental disorders consume more substances and such comorbidities affect their quality of life.[5, 8]

Methadone maintenance programs improve users' health, but results should be further investigated and specific nursing interventions evaluated.[12]

Well-known physical, psychosocial and spiritual consequences of consumption are one of the problem's dimensions to which nurses should respond. Management of this chronic disease and improvement of quality of life and well-being require the assessment of results and consequences of consumption through indicators that enable a detailed analysis.[7] This context prompted the development of the present research, since there were no evidences of such perspective in the existing literature.[13]

It is important that NOC outcome indicators should be evaluated by nurses and patients. They should not be considered an observation assessment tool to be used only by nurses. Awareness, self-analysis and ability to reflect on the evolution of the disease with current indicators are crucial to health-disease process.

Content validity results

According to the authors' guidelines and following advice and recommendations from other investigators, content validity aims to reduce uncertainties, difficulties and limitations inherent to processes of monitoring the effectiveness of care.[3] Besides, it legitimates the results of a given clinical situation.[14]

Content validity of nursing outcomes and its indicators aim to define the degree to which these are effective in the evaluation of specific nursing interventions. Testing the results means to use them in clinical practice, monitoring their response and ability to assess what it claims to measure. Subsequently, it allows to investigate the effectiveness of nursing interventions.[2, 4]

NOC outcomes contain numerous performance indicators that can be classified by the degree of importance. Validity of a result suggests that its characteristics are authentic representations of what is found in clinical practice.[16]

The outcome is an actual state, a perception or behaviour that can be measured as a response to one or more nursing interventions[3] and allows assessing good practices.[14]

This study aims to validate the contents of the NOC outcome "Consequences of substance addiction" with drug users in a methadone maintenance program.

The objective is to contribute to the development of an efficient tool in the evaluation of nursing interventions for substance abuse.

METHOD

The researchers applied the Fehring model,[17] widely used in validation of diagnostic, NANDA and NANDA-I as well as NOC outcomes in clinical practice.[4,14,16,18]

The validation process of an outcome has several stages. At the present moment national specialists are responsible to carry out this process in order to adapt the outcome indicators to our reality.

The authors analysed the original indicators of the NOC research team released in the 3rd Brazilian version[3] through careful reading. Subsequently, they classified and developed the defining characteristics hitherto unavailable. The literature review aimed at identifying health outcomes sensitive to nursing interventions for drug addiction. It sought to identify the most common consequences of drug abuse whether physical, psychological, social and spiritual, as well as the most common behavioural changes. The principles of the Cochrane Centre[19] were applied and the research question formulated using the PI[C]O method, namely: "*Which are the outcomes sensitive to nursing interventions for drug abusers taking part in a methadone maintenance program*?". SciELO, Lilacs and Medicaribe were accessed through the b-on and EBSCO search engines. The following descriptors20 were used: *outcomes*, *nursing*, *assessment*, *drug addicts*, *substance-related disorders* and *Methadone*. A total of 34 articles were selected from the 598 that focused on the sensitive results and the consequences of drug abuse.

Based on these 34 articles a table of indicators of the consequences of drug abuse was prepared. The original sixteen NOC outcome indicators were included, while others were inserted so as to increase the efficiency result. Twelve indicators were added in order to examine nursing interventions focussed specifically on certain consequences of drug use; e.g., *enabling the patient to manage daily activities* that, according to evidence, is obtained from interventions aimed at the establishment of a therapeutic relationship.[21] Other relevant indicators were *health self-management*[22, 23], *family relationships*, *ability to manage consumption or abstinence*[13,21] and *maintenance of multiple drug use*[10]. *Ability to assess one's own decision-making power to choose illegal practices against the feeling of well-being*[21] and *concern for the future*[11] were added a posteriori.

Three counterfeit indicators were included to ensure that participants would not fill the form randomly[15,17] (Table 1).

Table 1 - Outcome indicators

1 – Concern about health problems
2 – Inability to make daily decisions
3 – Difficulty to memorize daily routine
4 – Problems in family relationships
5 – Participation in illegal activities
6 – Lack of motivation for abstinence
7 – Lack of interest in daily activities
8 – Maintenance of polydrug use
9 – Isolation/loneliness
10 – Sadness
11 – Anxiety
12 – Concern about the future
Counterfeit indicators:
1 – Computer skills level
2 – Difficulties in learning sign language
3 – Lack of knowledge about cooking

Source: developed by the authors based on literature review.

Next stage consisted of elaborating a questionnaire to be submitted to specialists to assess their agreement with the selected indicators and to collect their contributions regarding the defining characteristics.

According to the Fehring model, after specialists are chosen, they classify the indicators according to their degree of significance to the outcome analysed. After that, researchers assign a value to the specialists' classification. Indicators with average less than 0.50 are removed, indicators with an average higher than 0.80 are considered primary and those with averages between 0.50 and 0.80 are considered secondary.

This is a quantitative exploratory descriptive study.

Sampling

The choice of specialists followed an adaptation of the Fehring model[14]. Such adaptation is needed given the lack of professionals, in Portugal, with a distinctive research experience in NOC outcomes or NANDA diagnosis, their adaptation and validation as well as publications on the subject.[17] This context influenced the selection of specialists with a different research background and experience in the care of drug abusers.

It is a non-probabilistic, intentional sampling. Experts were chosen by their recognized clinical practice, research, publications and work regarding the implementation of diagnostics and results in nursing information systems. Based on the first specialists' contributions, other experts were contacted. Selecting the specialists' profile gives more reliability to the results in the validation studies.[15]

In accordance with other researchers the inclusion criteria were determined and submitted to the necessary adjustments.[14, 15] A certain value was assigned to the criteria and specialists had to have at least six points.

- masters or PhD in substance abuse (four points);
- masters or PhD in nursing diagnosis and outcomes (four points);
- specialist in mental health or community nursing (three points);
- minimum of two years experience (two points);
- working experience of at least one year at the Institute on Drugs and Drug Addiction, I.P. (IDT) in the care of drug abusers (two points);
- participation for a minimum of six months in the last three years in training on international classification, interventions and outcomes or academic work on the subject (three points);
- working experience with drug users of at least one year in the last five years (two points);

The consultation to specialists aimed at assessing the link between outcome indicators and their degree of significance.

Data collection

Data was collected through an evaluation form on the significance of the outcome indicator "*Consequences of substance addiction*" .The form had two parts: the specialist's identification (age, education and work experience) and instructions and table with outcome indicators, their defining characteristics and a Likert-type scale with five items (ranging from 1 – not important to 5 – very important), to which degrees of significance were attributed.

Ethical and legal considerations were observed. The participants were clearly informed about the study objectives. Participation was formalized by the signature of a free and informed consent form to ensure that data would be used in the formulation of a questionnaire with no identification of individual opinions. The study was approved by the Ethics Committee of the Institute of Health Sciences of the Portuguese Catholic University.

RESULTS

A total of 17 questionnaires were sent and 13 replies were obtained (response rate 76.4%). Lack of response within one month led to exclusion. One participant was excluded after answering affirmatively to the three counterfeit items. There were two requests for clarification and contribution to the defining characteristics of two indicators.

After reviewing the 12 questionnaires, characterization based on the inclusion criteria was performed (Table 2).

Based on the weighted averages of significance attributed by the experts, the following results were obtained:

Table 3 presents the indicators with the sequence in which they appeared in the form, the average of the attributed values and the indicator's final classification. This enabled the elaboration of the final instrument to be used in clinical validation.

Table 2 - Specialists' characteristics

Average age	37,9 years (27-47)
Place of work	91.6% at IDT; 8,4% professors at Colleges of Nursing
Level of study	66% university degree (of these, 37.5% master's candidate in Mental Health or Nursing Management); 25% master's degree; 9% PhD
Specialization	75% specialists in mental health nursing; 9% community nursing; 16% general nursing care
Average years of professional experience	15.2 years (3-20), basically at IDT, some with hospital experience
Average years of experience with drug abusers	9.2 years (3-16), including hospitals and prisons
Specific training in classified language, interventions, diagnostics and outcomes	25%
Research on the subject	25%
Average score according to the adapted Fehring model	9.16 (6-13)

Fonte: elaborado pelos autores com base nos questionários dos peritos.

Table 3 - Classification of indicators after specialists' evaluation

Nº	Result indicator	Average	Classification
28	Isolation/loneliness	0.96	Primary
16	Problems in family relationships	0.94	Primary
27	Maintenance of polydrug use	0.92	Primary
11	Inability to make daily decisions	0.88	Primary
24	Lack of motivation for abstinence	0.88	Primary
10	Absenteeism from work or school	0.88	Primary
30	Anxiety	0.88	Primary
29	Sadness	0.85	Primary
26	Lack of interest in daily activities	0.81	Primary
15	Problems with self-supporting	0.81	Primary
12	Problems for maintaining employment	0.79	Secondary
8	Concern about own health problems	0.77	Secondary
5	Cognitive impairment	0.75	Secondary
31	Concern about the future	0.73	Secondary
20	Participation in illegal activities	0.71	Secondary
7	Longer recovering from diseases	0.67	Secondary
23	Repeated hospitalizations in the previous year	0.67	Secondary
3	Persistence chronically reduced	0.61	Secondary
22	Repeated visits to the emergency unit the previous year	0.60	Secondary
21	Repeated arrests the previous year	0.58	Secondary
13	Difficulty to memorize daily routine	0.58	Secondary
1	Reduced physical activity	0.56	Secondary
4	Chronic fatigue	0.54	Secondary
1	Difficulty doing housekeeping	0.54	Secondary
2	Chronic motor impairment	0.48	Excluded
6	Chronic respiratory impairment	0.40	Excluded
18	Driving accidents the previous year	0.38	Excluded
19	Frequency of fines the last year	0.27	Excluded
9	Inability at computer	0.19	Excluded
17	Difficulties learning sign language	0.10	Excluded
25	Lack of knowledge about cooking	0.8	Excluded

Source: developed by the authors based on experts' questionnaire.

DISCUSSION

Descriptive statistics were used in this research. The weighted average of the ratings given by the specialists to the outcome indicators was calculated, with subsequent classification of indicator according to the Fehring model.

Regarding the specialists, it was necessary to adapt Fehring criteria, as other authors[14, 15] did, because there are few experts in diagnostic results and even less in substance abuse nursing. In the present study, average age was 37.9 years, participants were mostly graduates who worked in the speciality and had IDT functions, 34% had masters or PhD. Only 25% had conducted research on related areas such as language classification and information systems.

In the context of professional specialization, mental health nursing stands out. This enabled us to assemble, during adaptation criteria, a group of experts with a clear understanding of the phenomenon and the outcome indicators of the researchers' interventions. There was an average of 9.2 years experience with drug abusers care, proving the professionals' vast experience. Experience in caring for this population is vital for the analysis of these indicators because the consequences are defined, observed and assessed over time and such experience

develops the ability to evaluate them properly.[23] The number of experts participating in the research and the appropriateness of inclusion criteria is consistent with recent studies.[16, 25]

Regarding the outcome "*Consequences of substance addiction*," this content validity led the original 16 items to the 24 items of the final version. The specialists' answers excluded four of the original items. The twelve items introduced later based on literature review were considered relevant. The specialists' classification validates the selections based on literature.[16, 26]

Such options reflect the phenomenon's multidimensional quality. There are indicators related to consumption and its psychosocial impact related to aging, to the comorbidities, vulnerability and quality of life.[11,12,27] The three dummy indicators were ignored, as expected.

The exclusion of four original indicators should be emphasized (2,6,18,19). The specialists considered that two of them (respiratory and motor impairment) were more related to physical aspects and not much affected by drug consumption. The other two (related to car accidents and fines) were not considered sensitive to nursing care.

Regarding the secondary indicators in the final version, it is important to note that they are mainly related to physical aspects. This supports the idea that such "outcome" is associated with more serious causes, with grief and difficulty of resolution, related to psychosocial dimensions.[5, 8]

It is noteworthy that the reduced weighted average attributed to indicators of physical aspects (fatigue and physical activity) led them to be included within the limits of criteria.

Amongst ten of the primary selected indicators, eight were included and only two were in the original instrument (*problems with self-supporting* and *absenteeism from work or school*). Those presenting high percentage of concordance – *isolation and loneliness, family problems and maintenance of polydrug use* – are related to main health determinants in drugs abusers.[11]

The concordance rate with the indicators based on the literature review is satisfactory and in line with other studies.[25, 26]

The influence of individual characteristics on results should be taken into account by measuring instruments.[3]

CONCLUSION

The present study aimed to provide an instrument to measure the consequences of drug abuse so as to attend the patients' needs. No publication was found in the databases on this NOC outcome.

The newly developed instrument favoured the indicators based on scientific evidence. Specialists in nursing care for drug abusers validated its content. The supplementary indicators are more suitable to the national context, care and consumption practices and to understand the psychosocial effects on our society. They me be helpful to improve care provided to those who seek public services and, besides, they may facilitate the evaluation of the consequences of drug use.

The population group presents physical and psychological comorbidities, social and rehabilitation problems and is increasingly older. They need support from specialists to manage the disease when they cannot or do not want to give up the consumption of substances.

The researchers consider that the contents of NOC outcome "*Consequences of substance addiction*" have been validated and are now ready for clinical validation. Its clinical efficacy will be tested among opiate users participating in methadone maintenance programs, although its administration to any other drug dependent group (under professional care or not) could be considered.

The clinical validity will follow two principles: the assessment of the connection between evaluators (comparing analysis performed by the research team with those performed by nursing care services) and its relation to other instruments with similar paradigms (e.g. quality of life).

Considering the improvement of health services, this type of study will provide realistic results for our practices. It is crucial that the results are assessed in relation to nursing practices since this will demonstrate their quality and effectiveness, even when integrated in transdisciplinary teams.

The present research makes clear recommendations, allowing the continuous assessment of clinical practice and enabling the re-evaluation of care practices and, consequently, the research on the effectiveness of care. It also has implications for teaching, since it supports systematic care and the establishment of nursing care goals. In essence, it contributes to the nursing process.

Finally, the NOC main objective – to build results that can be measured and to assess its sensitivity to nursing care – is compatible with another recommendation: that these "outcomes" could be analysed and used by other specialties.

It is expected that other researchers will further test this instrument and it is important to convey these results to the NOC research team.

A limitation of this study was the difficulty in fulfilling the criteria for the selection of specialists.

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